Chapter 1 Purpose and Need

In this Chapter:

- **The Purpose of and Need for Action**
- **Finding Solutions**
- **Decisions to be Made**
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For Your Information

Words and acronyms in bold and italics are defined in Chapter 9, **Glossary and Acronyms. Some are also defined in sidebars.*

Bonneville Power Administration (***BPA***)*, a federal agency, markets power to local utilities that provide electricity for homes, businesses, and farms in the Pacific Northwest. BPA owns and operates thousands of miles of electric transmission lines. The lines move power throughout the Northwest.

The U.S. Forest Service (***USFS***), also a federal agency, manages publicly-owned forestlands through which many of BPA's transmission lines run. The USFS manages individual national forests to meet the diverse needs of people for resources such as timber and recreation, and environmental values such as wilderness and wildlife.

Chapter 1 explains a problem, or need, that exists in northeastern Idaho and western Wyoming on BPA's transmission system. This chapter specifically describes how the need was first discovered and what conditions came together to create it. This chapter also describes how BPA and the local utility, Lower Valley Power and Light, Inc. (***LVPL***), developed solutions to meet this need.

*A summary of economic and technical studies done to define the need for the project is included in Appendix A, **Summary of Economic and Technical Studies.***

1.1 Need For Action

1.1.1 BPA's Need

*A **megawatt** is one million watts, or one thousand kilowatts. A megawatt is enough power to light 10,000 100-watt lightbulbs.*

Four to five megawatts per year is equivalent to about 3-4% load growth per year. Normal growth rates for other areas of the Northwest are closer to 1-2% per year.

*Lightning, trees falling into the line and other unusual events can cause **outages** on transmission lines.*

***Voltage** is the driving force that causes a current to flow in an electrical circuit.*

*A **brownout** is a partial reduction of electrical voltages that causes lights to dim and motor-driven devices to lose efficiency.*

*A **blackout** is the disconnection of the source of electricity from all electrical loads in a certain geographical area.*

LVPL buys electricity from BPA and then supplies it to the residences, farms and businesses of the Jackson and Afton, Wyoming areas. Since the late 1980s, LVPL's electrical load has been growing by an average of 4-5 ***megawatts*** (***MW***) per year, and LVPL expects continued growth at about this rate. LVPL's customers use the greatest amount of electricity in the winter when temperatures are low and heating needs are great. During the winter season, an ***outage*** of one of the BPA or LVPL transmission lines that serve these areas could cause ***voltage*** on the transmission system to dip below acceptable levels in the Jackson area and to a lesser extent in the Afton area (see Section 1.3.1, **Reliability Criteria**). Low voltage levels can cause ***brownouts***, or under certain conditions, a ***blackout***.

When voltage begins to drop on a transmission system, the system tries to correct itself and voltages fluctuate up and down. If the voltage keeps dropping and the system cannot correct itself, customers using certain appliances, computers and other electrical equipment sensitive to large voltage change may suffer equipment damage, even if they have surge protectors. If the system cannot recover, it will collapse and a blackout will occur. In a blackout, homes and businesses lose electricity completely.

These conditions can be dangerous to residents, farmers, and businesses, especially in winter. The transmission system that serves the Afton and Jackson, Wyoming areas needs to be reinforced as soon as possible to maintain voltage stability.

For Your Information

The US Forest Service (Targhee and Bridger-Teton National Forests) manages 84 percent of the land crossed by BPA's existing transmission line.

1.1.2 U.S. Forest Service Need

The USFS, represented by the Targhee and Bridger-Teton National Forests, is responsible for management of the national forests crossed by BPA's existing transmission line from Swan Valley Substation near Swan Valley in Bonneville County, Idaho east to Teton Substation, near Jackson in Teton County, Wyoming. (See Map 1, **Location Map**.). The USFS needs to evaluate the project for its consistency with its Forest Plans and appropriate legislation such as the National Environmental Policy Act, the Endangered Species Act, etc. The Forest Service could then issue a special use permit for the construction, operation, and maintenance of any new facilities that cross these lands.

1.2 Purpose

The purposes in the purpose and need statement are goals or objectives to be achieved while meeting the need for the project. These objectives are used to evaluate alternatives proposed to meet the need.

BPA will use the following objectives to choose among alternatives:

- Maintain environmental quality;
- Minimize costs while meeting BPA and LVPL's long-term transmission system planning objectives for the area;
- Maintain BPA and LVPL transmission ***system reliability***.

1.3 Background

*A **kilovolt** is one thousand volts.*

LVPL serves its customers from two 115-***kilovolt*** (***kV***) transmission lines. One line, owned and operated by BPA, runs from Swan Valley Substation east to Teton Substation, near Jackson,

Wyoming. The second line, owned by LVPL, runs from Palisades Switchyard at Palisades Dam, southeast along the reservoir to LVPL's Snake River Substation. (See Map 1.) At Snake River Substation, the line splits; one line follows the Snake River most of the way into Jackson, the other runs south to serve the Afton area.

The existing system can reliably serve up to 125 MW of electricity to LVPL, even if one of the lines described above goes out of service. The system is built for that emergency (see Section 1.3.1, **Reliability Criteria**). However, load growth in the Jackson, Wyoming area has passed the 125 MW limit recently (see Figure 1-1).

In 1994, the system winter peak was 120 MW. In 1995, the winter peak unexpectedly hit 139.5 MW. In 1996, the peak climbed to 141.2 MW, even without another 5 MW load from a mine that was closed at the time. In 1997, the winter peak was close to 130 MW. If one of the transmission lines had gone out of service (had an outage) during the winter peaks in 1995, 1996, or 1997, voltage would have quickly dropped.

Once the transmission system is down, it could take at least twice as much power to fully restore the system because as electrical equipment such as motors come back on line, about twice as much power is required to restart them all at the same time. Because the existing system cannot handle that much energy, LVPL, and to a lesser extent, BPA, the U.S. Bureau of Reclamation at Palisades Dam, and others must bring the system back up in stages, going from individual ***feeder*** line to individual feeder line. The time required to do this, which could be hours or even days depending on the weather and other conditions, could create a dangerous situation for LVPL's customers, especially those who do not have another source of fuel for heat and lights.

For Your Information

*A **feeder** line is a distribution line that serves certain neighborhoods.*

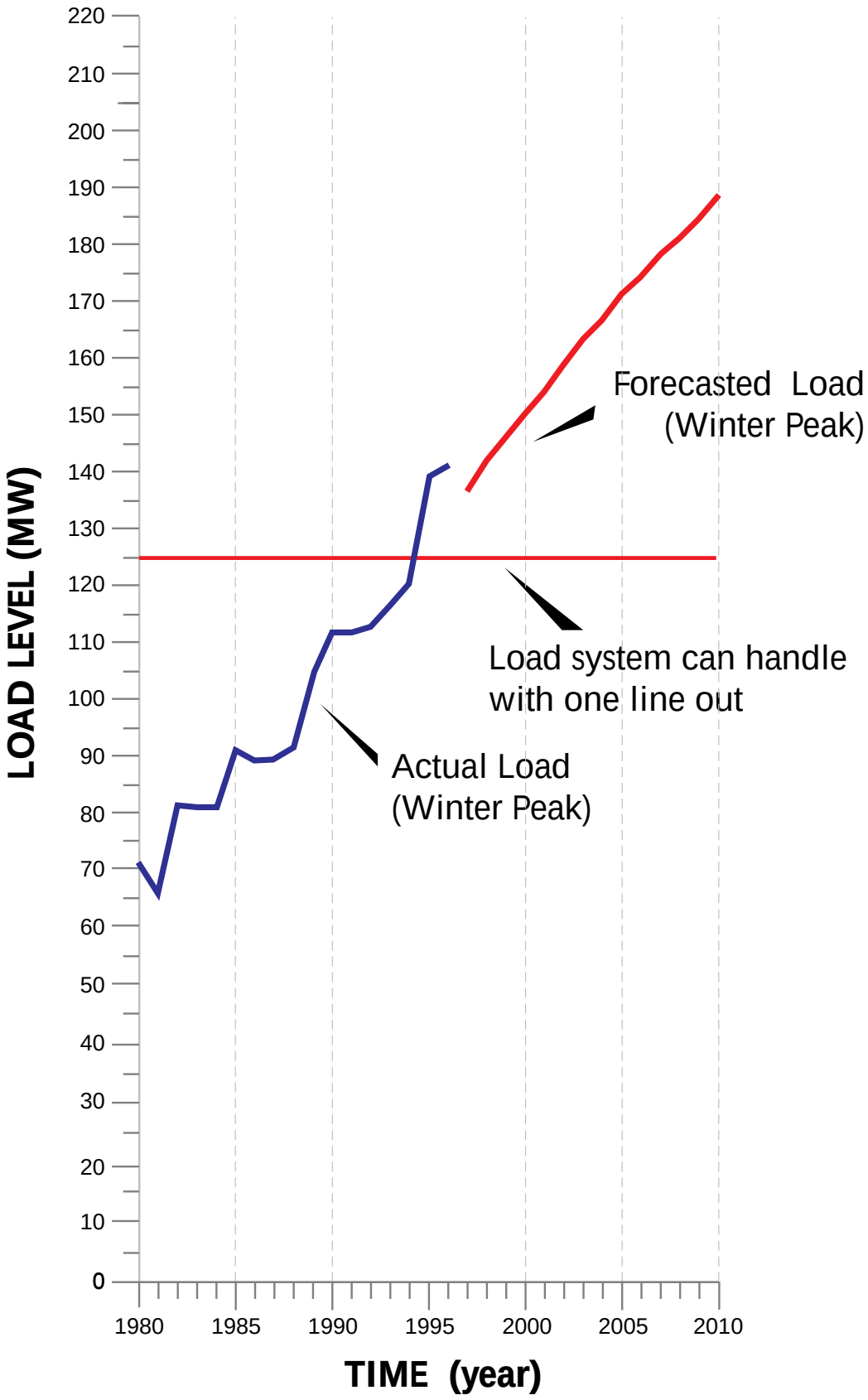
The reliability of BPA's transmission system is critical to LVPL's system.

1.3.1 Reliability Criteria

Utilities strive to provide reliable service at the best value for their customers. Cost-effectiveness is evaluated from the customer's perspective. Reliability is a measure of the transmission system's ability to meet customer demands. It is measured by how often power outages occur, how long they last, and how many customers are affected. A perfectly reliable system would always satisfy customer demand. Perfect reliability is not technically feasible and even if possible, would be extremely expensive for consumers.

Using rules based on experience, utilities design and operate transmission systems to meet high performance standards that come close to this "perfect" system. These rules, called reliability

Figure 1-1. Load Growth



criteria, set standards to ensure cost-effective, reliable service. A reliable system should provide electrical service under normal and emergency conditions. A transmission line outage caused by wind, ice, lightning or other events is an example of a system emergency. Reliability criteria define acceptable service under this kind of emergency. BPA's reliability criteria for areas like LVPL require if one transmission line is out, the system should serve any electricity use during normal peak winter cold weather, maintain voltages, and not ***overload*** lines.

1.4 Finding Solutions

After BPA and LVPL identified the voltage stability problem in the area, they began working together to solve it. BPA and LVPL did long-range (15-30 years) studies to determine what the transmission system needs to accommodate load growth, the best actions to meet those needs, what each action costs, and how different actions would affect the entire system. From the long-range studies, BPA and LVPL developed many alternatives to solve the problem and then chose the most feasible ones to study further.

For Your Information

*An **EIS** is a document that discloses the environmental impacts of a proposed action and alternatives.*

BPA also began this environmental impact statement (***EIS***) to refine alternatives, identify environmental resources and potential impacts from the alternatives, and determine other issues to consider before making any decision.

Chapter 2, **Agency Proposed Action and Alternatives**, describes the solutions developed.

1.5 Scoping and Major Issues

Scoping refers to a time early in a project when the public has an opportunity to express which issues should be considered in an environmental impact statement. On May 1, 1996, BPA published a Notice of Intent to prepare an EIS and to conduct public scoping meetings for the project. BPA developed a public involvement plan early in the planning process to identify ways to inform the public and others about the need for the project, and to scope issues for the environmental impact statement. The first project *For Your Involvement* (***FYI***) (May 3, 1996) explained the proposal, the environmental process, and how to participate (see Appendix B, **Public Involvement**). A comment sheet was included so individuals could mail their comments back to BPA. Project scoping meetings were held in the following locations: Idaho Falls, Idaho on May 20, 1996; Jackson, Wyoming on May 21, 1996; Driggs, Idaho, on May 22, 1996; and Irwin, Idaho on May 23, 1996. Written and verbal comments on the project were collected.

The Notice of Intent is in the Federal Register (61 FR 19267). The Federal Register publishes regulations and legal notices issued by federal agencies.

*BPA's **FYI**s provide information to interested parties and the public about individual projects.*

The second project *FYI* (July 10, 1996) contained the results of the scoping process (see Appendix B). Many issues were raised during the scoping process. Most comments were received about the following issues:

- Design and location of alternatives;
- Using other power sources such as natural gas;
- Quality of life issues such as visual resource issues and property values;
- Natural resources, for example, in the Pine Creek area;
- Recreation use, especially at Teton Pass and in designated Wilderness and Wilderness Study Areas;
- Noise, ***electric and magnetic fields*** (***EMF***) and fire hazards.

Comments received during the scoping period were used by environmental specialists in their environmental impact analyses. Other issues raised during scoping and many added concerns are addressed in Chapter 4, **Environmental Consequences**.

The third project *FYI* (March 1997) contained a status report about the environmental analyses and engineering work underway at that time. It also included a schedule for release of the Draft EIS (see Appendix B).

1.6 Decisions to be Made

When a project could involve more than one federal agency, those agencies work together during the planning and decision-making process. BPA is the lead federal agency on this project and supervises the preparation of the EIS. The U.S. Forest Service is a cooperating agency and assists BPA in EIS preparation.

A project of this size contains different alternatives and options for decision makers to consider. For this project, the following kinds of decisions must be made.

For Your Information

*A **right-of-way** is an easement over the land of another owner.*

- BPA must first choose an alternative. If the alternative is to build a new transmission line, BPA must decide where new ***right-of-way*** (***ROW***) would be needed, where structures and access roads would be placed, and the types of structures to use. If BPA chooses an alternative that requires new substation equipment only, BPA must decide where the equipment would be placed.
- The USFS (Targhee and Bridger-Teton National Forests) must decide if the project complies with currently approved forest plans, decide if special use permits or ***easements*** are needed for construction, operation, and maintenance of project facilities, and decide if they would issue special use permits and letters of consent to grant easements for the project.

More information about federal, state, and local consultations and permits for this project is in Chapter 5, **Consultation, Permit and Review Requirements**.

1.7 Other Project and Planning Activities Outside the Scope of this EIS

Long-range planning and other activities occurring in the area are outside the scope of this project, but are included here for information.

1.7.1 Long-Range Planning

BPA and its customers do long-range (15-30 years) transmission planning to meet their future needs. BPA and LVPL's long-range planning identifies several potential projects in the area. These projects depend on many uncertainties: future load growth, advances in technology, energy conversion to renewable resources, future customer needs, etc. Alternatives described in Chapter 2 to meet the need for the BPA/Lower Valley Transmission Project are the first and most important in a series of actions identified in the long-range plan. Future planning actions that may be proposed on other parts of BPA's and LVPL's transmission systems are outside the scope of this EIS and would be studied in more depth later if the probability that they would be needed becomes more certain. Potential impacts would be studied in additional environmental documents at that time.

1.7.2 South Fork Snake River/Palisades Wildlife Mitigation Project

BPA is funding the South Fork Snake River Programmatic Management Plan to compensate for losses of wildlife and wildlife habitat from hydroelectric development at Palisades Dam. The Idaho Department of Fish and Game drafted the plan, which was completed in May 1993. The plan includes land and conservation easement acquisition and wildlife habitat measures, such as fencing riparian areas and revegetation to create wildlife habitats. The measures will be completed along the South Fork Snake River and the lower portion of the Henry's Fork Snake River.

1.7.3 South Fork Snake River Basin Comprehensive State Water Plan

This plan was developed by the Idaho Water Resource Board and examines existing and planned resource uses in the South Fork Snake River Basin. The plan discusses the goals, objectives, and

recommendations of the Board concerning improving, developing, and conserving water resources in the public interest. The Draft plan was completed in October 1996. The final plan was presented to the Idaho Legislature in January 1997, and, with few changes, was approved in March 1997.

1.7.4 Targhee National Forest Plan

The Targhee National Forest has just finished updating its Forest Plan. The draft of the new plan and Draft EIS were released for public review in 1996, with the closing date for comments in June 1996. The Forest Service incorporated the comments received on the draft plan and Draft EIS, and released the final plan on April 15, 1997.

1.8 Organization of the Draft EIS

This environmental impact statement includes information necessary for agency officials to make decisions based on the environmental consequences of proposed actions.

Federal regulations specify the kinds of information decision-makers should have to make good decisions. This document follows those recommendations.

- Chapter 1 states the purpose and need for the project. Alternatives are evaluated based on the purpose and need.
- Chapter 2 describes the agency proposed action and alternatives, including taking no action, and summarizes the differences among alternatives, especially in potential environmental impacts.
- Chapter 3 describes the existing environment that could be affected by the project. The existing environment includes human and natural resources.
- Chapter 4 describes the possible environmental consequences of the agency proposed action and alternatives. Impacts can range from no or low impact to high impact.
- Chapter 5 reveals the licenses, permits and other approvals or conditions the alternatives must obtain or meet.
- Other chapters list individuals who helped prepare the EIS, references used, individuals, agencies, and groups the EIS will be sent to, a glossary, and an index. Supporting technical information is in appendices.